Paper No. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOAQUIN E. LUNA
and
SCOTT A. WHEELLOCK

Appeal No. 1997-3388
Application No. 08/060,767

ON BRIEF

Before JOHN D. SMITH, KRATZ, and DELMENDO, Administrative Patent Judges.

KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-6. Claim 7, the sole remaining pending claim in this application stands withdrawn from further consideration by the examiner as drawn to a non-elected invention.[1]

[1] We note that the propriety of the examiner's restriction requirement and the subsequent withdrawal of nonelected claim 7 from further consideration by the examiner as a result of the election made by appellants relate to a petitionable matter and not to an appealable matter. See Manual of Patent

BACKGROUND

Appellants' invention relates to a float-zone apparatus for processing a silicon element that includes a susceptor positionable around the free end of the silicon element. According to appellants, the susceptor is "formed from a material having less resistivity than the silicon element to be zoned" (specification, page 7). The design of the susceptor allows for the cylindrical susceptor "to be positioned around a free end of a silicon element to heat the free end of the silicon element to facilitate inductive coupling of the free end of the silicon element with an RF induction coil heater" (brief, page 2). Hence, appellants' susceptor is arranged and constructed to be positioned around a free end of the silicon element so as to function as a preheater of the silicon element to be zoned (specification, page 7). A further understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

Examining Procedure (MPEP) §§ 1002 and 1201, Rev. 1 (Feb., 2000). Accordingly, we will not review the restriction requirement issue as raised by appellants on pages 2-4 of the brief.

1. In combination with a float-zone apparatus for processing a silicon element, the apparatus having an RF induction coil heater and an element holder and a seed holder aligned vertically above and below the RF induction coil heater, the element holder being adapted to hold one end of a silicon element and the seed holder being adapted to hold a seed crystal of silicon, means for positioning the element holder relative to the RF induction coil heater to bring the free end of the silicon element into proximity with the RF induction coil heater to melt the free end of the silicon element forming a molten zone, and means for positioning the seed holder relative to the RF induction coil heater so that the seed crystal contacts and fuses with the molten zone, and means for varying the relative position of the RF induction coil heater to the silicon element such that the molten zone is moved along the length of the silicon element, the improvement comprising: a cylindrical susceptor positionable around the free end of the silicon element.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Ayel	3,935,059	Jan. 27, 1976
Great Britain (G.B. '827) (Published Great Britain Patent Application)	1,081,827	Sep. 06, 1967

Claims 1-6 stand rejected under 35 U.S.C. § 103 as being unpatentable over G.B. '827 in view of Ayel.

OPINION

Upon careful consideration of the opposing arguments presented on appeal, we concur with appellants that the examiner has not established a prima facie case of obviousness of the claimed subject matter. Accordingly, we will not sustain the examiner's rejection.

The examiner explicitly acknowledges that G.B. ‘827 does not disclose the claimed cylindrical susceptor in combination with the recited float-zone apparatus (answer, page 3). Additionally, the examiner suggests that the short-circuit ring apparatus of Ayel would have to be modified to correspond to the claimed cylindrical susceptor (answer, page 3). According to the examiner, it would have been obvious to one of ordinary skill in the art to modify the short-circuit ring apparatus of Ayel to correspond to the claimed cylindrical susceptor. The examiner reasons “[t]he motivation being that the short-circuit ring (4) could function as susceptor (9) of the instant claims, which would help the uniform effectiveness of the heating coil’s preheating of the free end of the silicon element” (sentence bridging pages 3 and 4 of the answer) (emphasis in original).

We cannot subscribe to the examiner's position since the examiner has not clearly explained how the teachings of G.B. ‘827 and Ayel are being combined so as to arrive at the claimed invention. Indeed, the examiner offers no reasoning as to how the references’ teachings are being combined. Moreover, with regard to the proposed modification of the apparatus of Ayel, the examiner has not sufficiently explained how the short-circuit ring of Ayel is to be structurally modified so as to result in a floating-zone apparatus including a cylindrical susceptor as claimed. The explanation of motivation offered in the answer by the examiner is not persuasive since the nature of the proposed structural modification of the structure of Ayel is not made clear by the examiner and the examiner has not pointed to any disclosure in Ayel which suggests that the short-circuit ring of Ayel could or should function as a heating device (susceptor) for the polycrystalline rod (element 1, Fig. 1) therein.

In light of the above, we cannot sustain the examiner's § 103 rejection based on this record.

CONCLUSION

The decision of the examiner to reject claims 1-6 under 35 U.S.C. § 103 as being unpatentable over G.B. '827 in view of Ayel is reversed.

REVERSED

JOHN D. SMITH Administrative Patent Judge	)
PETER F. KRATZ Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)

PFK:hh

Patent Department - Mail C01232
Dow Corning Corporation
Midland, MI 48686-0994